~~SUMMARY~~ ABSTRACT

It is disclosed a method for fabricating, modifying or repairing of single crystal ~~(SX)~~ or directionally solidified ~~(DS)~~ articles ~~(1)~~. Two single crystal ~~(SX)~~ or directionally solidified ~~(DS)~~ prefabricated parts are joint by isothermally brazing using a brazing material. After that an epitaxial or non-epitaxial layer on the surface of the created article ~~(1)~~ and of the braze joint is applied using a laser metal forming process.

~~(Fig. 4b)~~

Please replace the paragraph beginning on page 2, line 15 and ending on page 3, line 14, with the following amended paragraph:

So far, several patents have been issued for the laser metal forming process. The basic principle is described in EP-A1-0 558 870, DE-C1-199 49 972, ~~US-A-5,873,960~~ US-A 5,837,960 , US-A-5,622,638 or US-A-4,323,756. During laser metal forming substrate material is locally molten and powder (or wire) is injected into the melt pool with a suitable powder (or wire) feeder mechanism. After a certain interaction time (which is determined by the laser spot size and the relative movement between laser and substrate) the molten material resolidifies leading to material build-up on the substrate. The process carries the particular advantage that, being numerically controlled, new design can be created offline and subsequent relatively quickly realised as prototype components. Processing occurs on a part-by-part basis, which, in great contrast to casting technology, ultimately gives the possibilities of reducing the batch size to just one component. A range of materials may be deposited by the same process so that specialised oxidation, wear or corrosion resistant regions may be formed as different parts of a functionally graded component. However, there are serious limitations, which limit the applicability of this otherwise useful process. Firstly, control over the deposited material, though thoroughly adequate for predominantly surface-based operations, is difficult to maintain as deposits become large and extensive. A second barrier to the metal forming of large monoliths is simply that the mass deposition rates, currently available in the art of epitaxial laser metal forming, would make the formulation of such artefacts an extremely time consuming operation. The fabrication of a large component would therefore best be achieved by commencing with a basic single crystal preform or blank, and modifying its shape by way of controlled addition of SX material. Thirdly, the powder stream may not be directed in all places it would be desired, because the proximity of the edges of other parts of the component obstruct the gas/power

stream and make the process enviable. Such a feature, in which it is impossible to conduct epitaxial laser metal-forming is e.g. a large gap or crack. This limits the usefullness of the process in certain repair and modification operations.

Please replace the paragraph beginning on page 6, line 19 and ending on page 6, line 25, with the following amended paragraph:

Fig. 1 shows a single crystal (SX) or directionally solidified (DS) article 1 such as blades or vanes of gas turbine engines, the gas turbine blade comprising a root portion 2, a platform 3 and a blade 4 and having a surface 5. The article 1 can as an example be made from a nickel or cobalt based super alloy. Investment casting methods for producing such SX or DS articles are known e.g. from the prior art ~~US-A-4,96,501~~ US-A-4,960,501, US-A-3,690,367 or EP-A1-0 749 790. These articles 1 are normally made from a nickel or cobalt base super alloy.